

GOOD COMBUSTION PRACTICES

This guidance is intended to be used by the source work groups in their evaluation of alternative concepts regarding good combustion practices. While operator training could also be considered a good combustion practice, it is covered by separate guidance.

Examples of practices listed are intended to indicate the range of existing practices which are dependent on the specific type of equipment utilized and the fuel/waste input to the combustion device. All examples of specific techniques are not considered applicable to all combustion sources. The source work groups should be requested to evaluate techniques, practices, and possible standard approaches appropriate for subcategories or other subsets of sources.

Periodic checks and adjustments of combustion equipment are intended to occur at intervals appropriate for the source, with key combustion checks timed no less frequent than to coincide with overhaul frequencies.

Good Combustion Technique	Examples of Practices	Applicable Source Types	Possible Standard
Operator practices	-Official documented operating procedures, updated as required for equipment or practice change -Procedures include startup, shutdown, malfunction -Operating logs/record keeping	All	-Maintain written site specific operating procedures in accordance with GCPs, including startup, shutdown, malfunction
Maintenance knowledge	-Training on applicable equipment & procedures	All	-Equipment maintained by personnel with training specific to equipment
Maintenance practices	-Official documented maintenance procedures, updated as required for equipment or practice change -Routinely scheduled evaluation, inspection, overhaul as appropriate for equipment involved -Maintenance logs/record keeping	All	-Maintain site specific procedures for best/optimum maintenance practices -Scheduled periodic evaluation, inspection, overhaul as appropriate

Good Combustion Technique	Examples of Practices	Applicable Source Types	Possible Standard
Stoichiometric (fuel/air) ratio	<ul style="list-style-type: none"> -Burner & control adjustment based on visual checks -Burner & control adjustment based on continuous or periodic monitoring (O₂, CO, CO₂) -Fuel/air metering, ratio control -Oxygen trim control -CO control -Safety interlocks 	Open combustion	<ul style="list-style-type: none"> -SR limits appropriate for unit design & fuel -Routine & periodic adjustment -CO limit
Firebox (furnace) residence time, temperature, turbulence	<ul style="list-style-type: none"> -Supplemental stream injection into active flame zone -Residence time by design (incinerators) -Minimum combustion chamber temperature (incinerators) 	<ul style="list-style-type: none"> -Open combustion with supplemental vent streams -Incinerators 	
Proper liquid atomization	<ul style="list-style-type: none"> -Differential pressure between atomizing media & liquid -Flow ratio of atomizing media to liquid flow -Liquid temp or viscosity -Flame appearance -Atomizer condition -Atomizing media quality 	Open combustion with liquid fuel/waste	<ul style="list-style-type: none"> -Routine & periodic adjustments & checks -Maintain procedures to ensure adequate atomization & mixing with combustion air
Fuel/waste quality (analysis); fuel/waste handling	<ul style="list-style-type: none"> -Monitor fuel/waste quality -Fuel quality certification from supplier if needed -Periodic fuel/waste sampling and analysis -Fuel/waste handling practices 	All- where appropriate	<ul style="list-style-type: none"> -Fuel/waste analysis where composition could vary & of significance to HAP emissions (e.g., not pipeline natural gas) -Fuel/waste handling procedures applicable to the fuel/waste
Fuel/waste sizing	<ul style="list-style-type: none"> -Fuel/waste sizing specification & checks -Pulverized coal fineness checks 	Solid fuel/waste firing	<ul style="list-style-type: none"> -Specification appropriate for fuel/waste fired -Periodic checks
Combustion air distribution	<ul style="list-style-type: none"> -Adjustment of air distribution system based on visual observations -Adjustment of air distribution based on continuous or periodic monitoring 	Mainly stoker and solid fuel firing	<ul style="list-style-type: none"> -Routine & periodic adjustments & checks
Fuel/waste dispersion	<ul style="list-style-type: none"> -Adjustment based on visual observations 	Solid fuel/waste firing	<ul style="list-style-type: none"> -Routine & periodic adjustments & checks

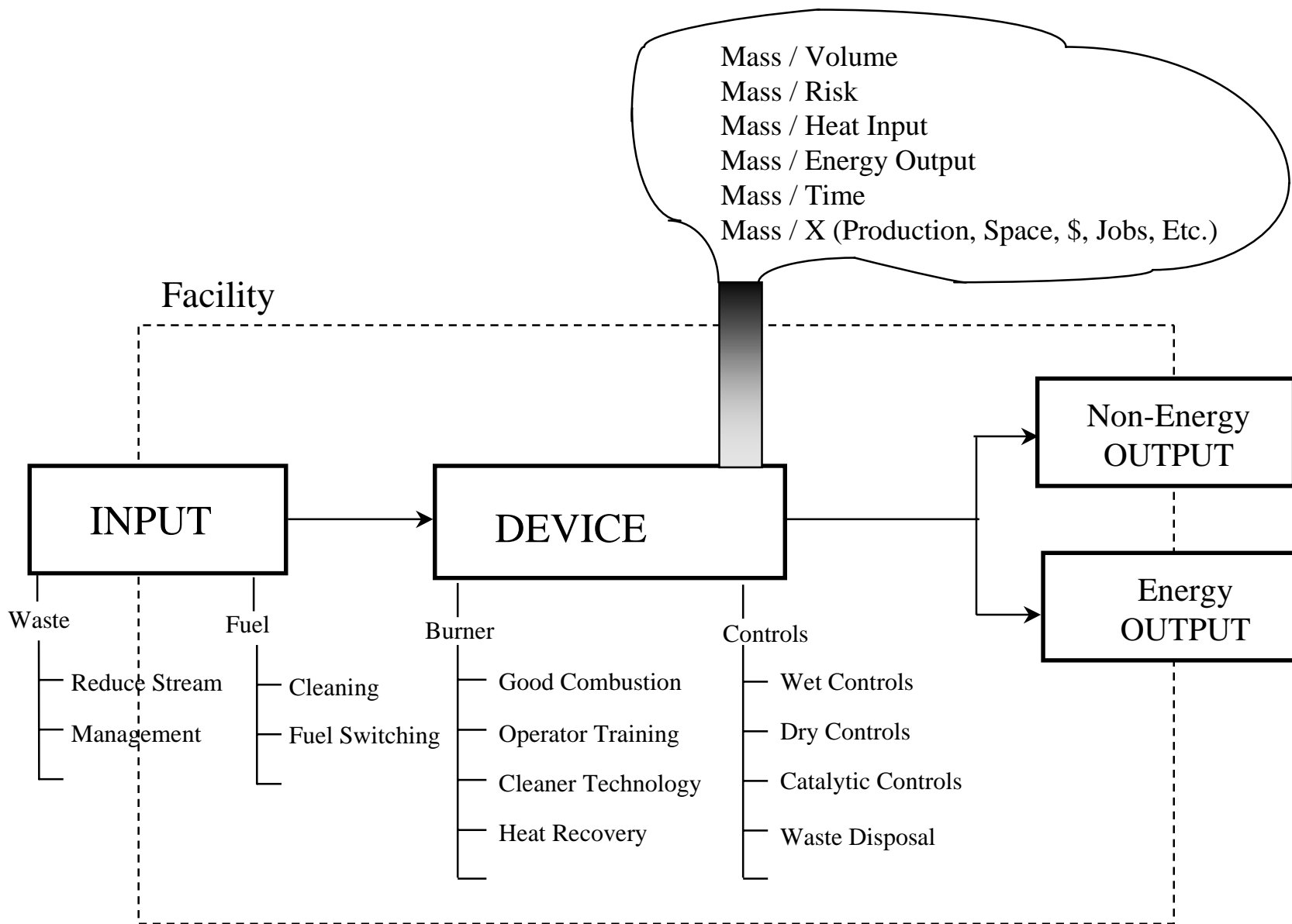


FIGURE 1

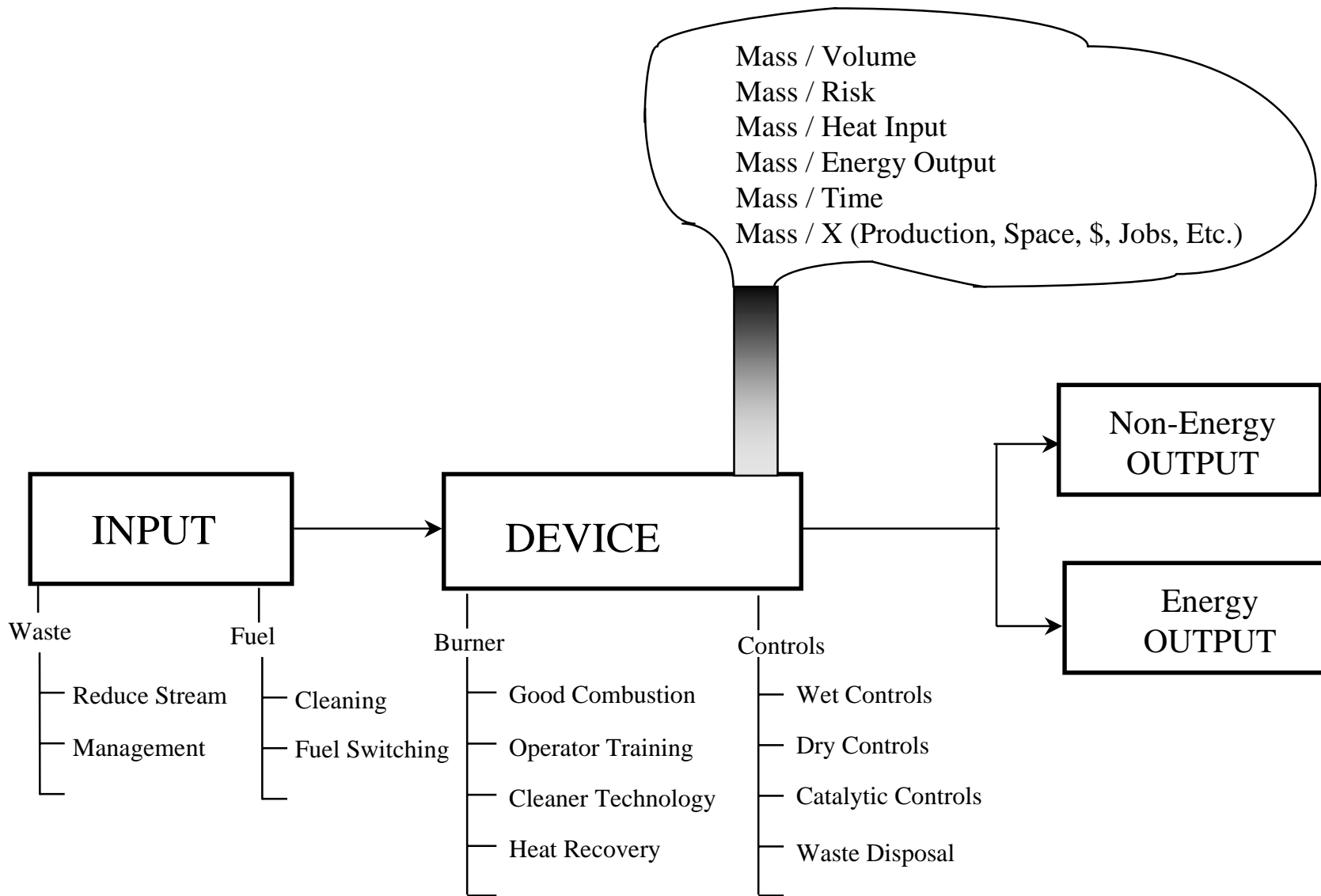


FIGURE 2